SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Nonhuman animal for constructing antibody and method and system of constructing antibody using the same

<130> C1-A0326P

<150> JP2004-107669

<151> 2004-03-31

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		ccc Pro								288
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		aac Asn								432
		cag GIn								480
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gcc	aag	tac	aca	gag	gga	gac	act	gcc	асс	aaa	ggc	gac	ctg	atg	cat	912
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					0.0					010					320	
295	ctø	atø	cat	e ca	rar	atr	aar	220	cta	225	22+	a t m	cta	cac	~ ^ ^	1000
														His		1008
u	~~u	ino L		325	3	116	ASII	r19		V911	4911	MICT	ren		42h	
				JLJ					330					335		

				Val					Glu					Asr	ctc Leu	1056
			Ser					Phe					Thr		ttg Leu	1104
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						tgg Trp										1344
						aac Asn 455										1392
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Val Gly Lys Glu Asp Leu Leu Met Trp Ser lle Arg Gln Gln Cys Glu

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- Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys 145 150 155 160
- Ser Trp Arg Cys Gly IIe Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu 165 170 175
- Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr lle Leu Asp Ala Glu 180 185 190
- Gly Asn Pro Ile Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly 195 200 205
- Val Ser Met IIe Leu Lys Gin Lys Ser Thr Phe Thr Thr Arg Gin IIe 210 215 220
- Lys Ala Ala Cys Leu Leu IIe Lys Asp Asp Lys Asn Asn Pro Glu Ser 225 230 235 240
- Val Thr Arg Glu His Cys Leu IIe Asp Asn Asp IIe Tyr Asp Leu Ser 245 250 255
- Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys lie Lys Arg Lys Val 260 265 270
- Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His Asn Val Arg 275 280 285
- Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp Leu Met His 290 295 300
- lle Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys Met Asn lle

305	i				310)				31	5				320
Glu	Leu	ı Met	t His	s Ala 325		: 116	e Asr	ı Lys	s Lei 33(n Asr	n Me	t Lei	33!	s Asp 5
Leu	He	e Va∣	Sei 34(Ala	Lys	s Val	Asr 345		ı Arş	g Lei	ı ile	e GI) 35(ı Leu
Met	Asn	Asr 355		^r Val	Ser	Ser	Thr 360		e Lei	ı Sei	Asp	Asr 365		· Phe	e Leu
Leu	Met 370		Cys	Thr	Asn	Pro 375		Ala	His	Thr	Ser 380		ı Cys	Tyr	Asn
Asn 385	Ser	lle	Tyr	Lys	G1u 390	Gly	Arg	Trp	Val	Ala 395		Thr	Asp	Ser	Ser 400
GIn	Cys	lle	Asp	Phe 405		Asn	Tyr	Lys	Glu 410		Ala	lle	Asp	Asp 415	Asp
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Trp	Lys	Asp 435	Ala	Ser	Gly	Trp	Ser 440	Phe	lle	Ala	Gln	GIn 445	Lys	Ser	Asn
Leu	11e 450	Thr	Thr	Met	Glu	Asn 455	Thr	Lys	Phe	Gly	Gly 460	Val	Gly	Thr	Ser
Leu 465	Ser	Asp	lle	Thr	Ser 470	Met	Ala	Glu	Gly	Glu 475	Leu	Ala	Ala	Lys	Leu 480
Thr	Ser	Phe	Met	Phe 485	Gly	His	Val	Val	Asn 490	Phe	Val	lle	He	Leu 495	lle
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+	224	. + +			++~	~~~								•		
			aaa													144
1 7 1	LYS	35	Lys	Wall	Leu	W2h	40	1111	Pro	Pro	LYS		ınr	Leu	GIN	
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Val	Gly	Glu	Glu	Leu	He	Asp	Arg	Trp	Gly	Ser	Asp	Ser	Asp	Asp	Cys	
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				Asn					Are				g Ly:	a gtc s Val	816
			Va I					Pro				Asr		t aga Arg	864
		Tyr					Thr				Asp			cat His	912
	Gln					Tyr				Leu				att He 320	960
			cat His											Asp	1008
			tcc Ser 340												1056
			tct Ser											ttg Leu	1104
			tgc Cys		Asn										1152
			tac Tyr												1200

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Leu 465	Ser	Asp	He	Thr	Ser 470	Met	Ala	Glu	Gly	G1u 475	Leu	Ala	Ala	Lys	Leu 480	
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Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys Thr Gly Pro

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- Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln Gln Cys Glu 100 105 110
- Val Gly Glu Glu Leu lle Asp Arg Trp Gly Ser Asp Ser Asp Cys 115 120 125
- Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly Lys Glu Leu 130 135 140
- Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr Cys Asn Lys 145 150 155 160
- Ser Trp Arg Cys Gly Ile Ser Thr Ser Lys Met Tyr Ser Arg Leu Glu 165 170 175
- Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr lle Leu Asp Ala Glu 180 185 190
- Gly Asn Pro IIe Asn Val Thr Val Asp Thr Val Leu His Arg Asp Gly 195 200 205
- Val Ser Met lie Leu Lys Gin Lys Ser Thr Phe Thr Thr Arg Gin lie 210 215 220

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Glu	His	Arg 275	Val	Lys	Lys	Arg	Pro 280	Pro	Thr	Trp	Arg	His 285	Asn	Val	Arg
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				.				~·J	0	٠.,		,,,	iui	L J 3	u, j	
	a a t A s n I I I I I I I I I I I I I I I I I I I	a at tcc Asn Ser I g gcg ca a Ala Hi g ggt cc r Gly Pr 35 g ctg ca r Leu Gli 50 a aac gti u Asn Va g ggc ggi u Cys Gli t tgc gag t tgc	aat tcc acc Asn Ser Thr g gcg cat to a Ala His So 20 g ggt ccg ta r Gly Pro Ty 35 g ctg caa aa r Leu Gln Ly 50 a aac gtg at u Asn Val II g ggc ggc tc g Gly Gly Se g ctg aat gt Leu Asn Va 10 g tgc gag gt Cys Glu Va 115 gac tgt tt Asp Cys Ph	aat too acc atg Asn Ser Thr Met g gcg cat tot gc a Ala His Ser A 20 g ggt ccg tac aa r Gly Pro Tyr Ly 35 g ctg caa aag ga r Leu Gln Lys As 50 a aac gtg att at u Asn Val IIe II g ggc ggc tcg ct g Gly Gly Ser Le 85 g ctg aat gtg gg Leu Asn Val Gl 100 g tgc gag gtg gg Cys Glu Val Gl 115 gac tgt ttt cg Asp Cys Phe Ar	Asn Ser Thr Met Val 5 g gcg cat tct gcc t a Ala His Ser Ala Pl 20 g ggt ccg tac aag a r Gly Pro Tyr Lys I 35 g ctg caa aag gac gg r Leu Gln Lys Asp Va 50 a aac gtg att atc gg a Asn Val IIe IIe Gl 70 g ggc ggc tcg ctg ga a Gly Gly Ser Leu As 85 g ctg aat gtg ggc aa c Leu Asn Val Gly Ly 100 g tgc gag gtg ggc ga Cys Glu Val Gly Gl 115 gac tgt ttt cgc ga Asp Cys Phe Arg As	Asn Ser Thr Met Val Ser Ser Ser Thr Met Val Ser Ser Secretation of the Armonia	Asn Ser Thr Met Val Ser All 5 g gcg cat tct gcc ttt gcg a Ala His Ser Ala Phe Ala 20 g ggt ccg tac aag att aaa r Gly Pro Tyr Lys Ile Lys 35 g ctg caa aag gac gtg gaa r Leu Gln Lys Asp Val Glu 50 55 a aac gtg att atc ggc tac aac gtg at ccc Gly Gly Ser Leu Asp Pro 85 g ctg aat gtg ggc aaa gag ctg gat ccc Gly Gly Ser Leu Asp Pro 85 g ctg aat gtg ggc aaa gag ctg gac gac ggc tcg ctg gat ccc Gly Gly Ser Leu Asp Pro 85 g ctg aat gtg ggc aaa gag ctg gac gac ggc Cys Glu Val Gly Glu Glu 115 gac tgt ttt cgc gac aac gac Asp Cys Phe Arg Asp Asn 6	Asn Ser Thr Met Val Ser Ala I Ser Good cat tot good tot good good a Ala His Ser Ala Phe Ala Ala 20 geget cog tac aag att aaa aac Good good good good good good good good	Asn Ser Thr Met Val Ser Ala IIe Val Ser Ala His Ser Ala Phe Ala Ala Glu 20 25 Be get ccg tac aag att aaa aac ttg ala IIe IIe Gly Pro Tyr Lys IIe Lys Asn Leu 35 40 Be ctg caa aag gac gtg gaa atc acc acc IIIe IIe Gly Tyr Lys Gly To 55 Be aac gtg att atc ggc tac aag ggg IIIe IIe IIe Gly Tyr Lys Gly To IIIe IIe Gly Tyr Lys Gly To IIIe IIe Gly Tyr Asn Thr 85 Be ctg aat gtg ggc aaa gag gat ttg IIIe IIIe IIIe IIIe IIIe IIIe IIIe	Ash Ser Thr Met Val Ser Ala lle Val L Ash Ser Thr Met Val Ser Ala lle Val L 5 1 g gcg cat tct gcc ttt gcg gcg gag cac a Ala His Ser Ala Phe Ala Ala Glu His 20 25 g ggt ccg tac aag att aaa aac ttg gac r Gly Pro Tyr Lys lle Lys Ash Leu Asp 35 40 g ctg caa aag gac gtg gaa atc acc atc r Leu Gln Lys Asp Val Glu lle Thr lle 50 55 a aac gtg att atc ggc tac aag ggg tac I Ash Val lle lle Gly Tyr Lys Gly Tyr 70 g ggc ggc tcg ctg gat ccc aac aca cgc I Gly Gly Ser Leu Asp Pro Ash Thr Arg 85 90 g ctg aat gtg ggc aaa gag gat ttg ctt Leu Ash Val Gly Lys Glu Asp Leu Leu 100 105 g tgc gag gtg ggc gaa gag ctg atc gac Cys Glu Val Gly Glu Glu Leu lle Asp 115 120 gac tgt ttt cgc gac aac gag ggc cgc Asp Cys Phe Arg Asp Ash Glu Gly Arg	aat too acc atg gta agc gct att gtt tta the Asn Ser Thr Met Val Ser Ala IIe Val Leu Tool 10 g gcg cat tot gcc ttt gcg gcg gag cac tgc a Ala His Ser Ala Phe Ala Ala Glu His Cys 20 25 g ggt ccg tac aag att aaa aac ttg gac att refer Gly Pro Tyr Lys IIe Lys Asn Leu Asp IIe 35 40 g ctg caa aag gac gtg gaa atc acc atc gtg refer Leu Gln Lys Asp Val Glu IIe Thr IIe Val 50 55 a aac gtg att atc ggc tac aag ggg tac tac aac gtg atc acg gec ggc ggc tcg ctg gat ccc aac aca cgc gtc acg ggc ggc tcg ctg gat ccc aac aca cgc gtc acg ggc ggc tcg ctg gat ccc aac aca cgc gtc acg ggc ggc ggc tcg ctg gat ccc aac aca cgc gtc acg ggc ggc ggc ggc ggc aaa gag gat ttg ctt atg gec aat ggg gat ttg ctt atg leu Asn Val Gly Lys Glu Asp Leu Leu Met 100 105 g tgc gag gtg ggc gaa gag ctg atc gac cgt cys Glu Val Gly Glu Glu Leu IIe Asp Arg 115 120 gac tgt ttt cgc gac aac gag ggc cgc ggc Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly	Asn Ser Thr Met Val Ser Ala lle Val Leu Tyr V 1 5 10 8 gcg cat tct gcc ttt gcg gcg gag cac tgc aac a Ala His Ser Ala Phe Ala Ala Glu His Cys Asn 20 25 8 ggt ccg tac aag att aaa aac ttg gac att acc r Gly Pro Tyr Lys lle Lys Asn Leu Asp lle Thr 35 40 8 ctg caa aag gac gtg gaa atc acc atc gtg gag r Leu Gln Lys Asp Val Glu lle Thr lle Val Glu 50 55 60 9 aac gtg att atc ggc tac aag ggg tac tac cag ac acc gtg ga acc gtg gat acc gtg gat acc ggg gag gac ggg gac gac	Asn Ser Thr Met Val Ser Ala IIe Val Leu Tyr Val L Ser Sec Cat tot good tit goog goog gag cac tgc aac goog gag cac tgc gac goog gag cac tgc aac goog gag cac tgc goog gag cac tac coog goog gag cac tac goog goog gag cac tac goog goog gag cac tac goog goog gag cac tac cac goog goog gag cac tac goog goog gag cac tac cac goog goog gag cac tac goog gag cac tac goog gag gag cac tac gac goog gag gag cac tac gac goog gag gag cac goog gag gag cac tac gac goog gag cac tac gac goog gac gac gac gac gac gac tac gac goog gac gac gac tac gac gac gac gac cac tac gac goog cac tac gac goog gac cac 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Val lle lle Gly Tyr Lys Gly Tyr Tyr Glu Ala Tyr 70 75 Segec ggc tcg ctg gat ccc aac aca cgc gtc gaa gaa acc In Gly Gly Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr 85 90 Secte aat gtg ggc aaa gag gat ttg ctt atg tgg agc atc Leu Asn Val Gly Lys Glu Asp Leu Leu Met Trp Ser lle 100 105 110 Set gag gtg ggc gaa gag ctg atc gac cgt tgg ggc agt Cys Glu Val Gly Glu Glu Leu lle Asp Arg Trp Gly Ser 120 125 gac tgt ttt cgc gac aac gag ggc cgc ggc cag tgg gtc Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly Glu Trp Val	Asn Ser Thr Met Val Ser Ala lle Val Leu Tyr Val Leu Leu Asn Ser Thr Met Val Ser Ala lle Val Leu Tyr Val Leu Leu Ash Ser Ser Thr Met Val Ser Ala lle Val Leu Tyr Val Leu Leu Ash I	aat too acc atg gta agc gct att gtt tta tat gtg ctt ttg gcg gcg Asn Ser Thr Met Val Ser Ala IIe Val Leu Tyr Val Leu Leu Ala Ala 1 5 10 15 g gcg cat tot gcc ttt gcg gcg gag cac tgc aac gcg caa atg aag a Ala His Ser Ala Phe Ala Ala Glu His Cys Asn Ala Gln Met Lys 20 25 30 g ggt ccg tac aag att aaa aac ttg gac att acc ccg ccc aag gaa r Gly Pro Tyr Lys IIe Lys Asn Leu Asp IIe Thr Pro Pro Lys Glu 35 40 45 g ctg caa aag gac gtg gaa atc acc atc gtg gag acg gac tac aac r Leu Gln Lys Asp Val Glu IIe Thr IIe Val Glu Thr Asp Tyr Asn 50 55 60 a aac gtg att atc ggc tac aag ggg tac tac cag gcg tat gcg tac i Asn Val IIe IIe Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr 70 75 80 c ggc gcc tcg ctg gat ccc aac aca cgc gtc gaa gaa acc atg aaa i Gly Gly Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys 85 90 95 g ctg aat gtg ggc aaa gag gat ttg ctt atg tgg agc atc agg cag Leu Asn Val Gly Lys Glu Asp Leu Leu Met Trp Ser IIe Arg Gln 100 105 110 g tgc gag gtg ggc gaa gag ctg atc gac cgt tgg ggc agt gac agc Cys Glu Val Gly Glu Glu Leu IIe Asp Arg Trp Gly Ser Asp Ser 115 120 125 gac tgt ttt cgc gac aac gag ggc cgc ggc cag tgg gtc aaa ggc Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly

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Cys	Asn	Lys	Ser	Trp	Arg	Cys	Gly	Пe	Ser	Thr	Ser	Lys	Met	Tyr	Ser	
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gac	gct	gag	ggc	aac	ССС	atc	aac	gtg	acc	gtg	gac	act	gtg	ctt	cat	625
Asp	Ala	Glu	Gly	Asn	Pro	Пe	Asn	Val	Thr	Val	Asp	Thr	Val	Leu	His	
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Arg		Gly	Val	Ser	Met		Leu	Lys	GIn	Lys	Ser	Thr	Phe	Thr	Thr	
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cgc	caa	ata	aaa	gct	gcg	tgt	ctg	ctc	att	ааа	gat	gac	222	aat	aar	721
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225			_		230					235		7.06	_,,	7.511	240	
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ro	Glu	Ser	Val	Thr	Arg	Glu	His	Cys	Leu	He	Asp	Asn	Asp	He	Tyr	
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aac	gtt	aga	gcc	aag	tac	aca	gag	gga	gac	act	gcc	acc	aaa	ggc	gac	913
Asn	Val	Arg	Ala	Lys	Tyr	Thr	Glu	Gly	Asp	Thr	Ala	Thr	Lys	Gly	Asp	
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	met	His	rie	GIN		GIU	Leu	мет	ıyr		ASN	ASP	Leu	Leu	Lys	
305					310					315					320	
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				020					000					000		
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		gac														1057
Leu	His	Asp	Leu	He	Val	Ser	Val	Ala	Lys	Val	Asp	Glu	Arg	Leu	Пe	
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		Leu													-	
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Thr	Phe	Leu	Leu	Met	Pro	Cys	Thr	Asn	Pro	Pro	Ala	His	Thr	Ser	Asn	
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tgc	tac	aac	aac	agc	atc	tac	aaa	gaa	ggg	cgt	tgg	gtg	gcc	aac	acg	1201
		Asn														.20.
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505					330					333					400	
		tcg														1249
Asp	Ser	Ser	GIn	Cys	Пe	Asp	Phe	Ser	Asn	Tyr	Lys	Glu	Leu	Ala	He	
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gac	gac	gac	gtc	gag	ttt	tgg	atc	CCE	acc	atc	ggc	aac	acg	acc	tat	1297
		Asp														. 201
			420	J . U					• • • • •	116	413	ചാ		1111	171	
			440					425					430			
cac	gac	agt	tgg	aaa	gat	gcc	agc	ggc	tgg	tcg	ttt	att	gcc	caa	caa	1345

His Asp Ser Trp Lys Asp Ala Ser Gly Trp Ser Phe IIe Ala Gln Gln
435 440 445

aaa agc aac ctc ata acc acc atg gag aac acc aag ttt ggc ggc gtc 1393 Lys Ser Asn Leu IIe Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val 450 455 460

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Thr Gly Pro Tyr Lys lie Lys Asn Leu Asp lie Thr Pro Pro Lys Glu 35 40 45

Thr Leu Gin Lys Asp Val Giu IIe Thr IIe Val Giu Thr Asp Tyr Asn 50 55 60 Glu Asn Val lie lie Gly Tyr Lys Gly Tyr Tyr Gln Ala Tyr Ala Tyr 65 70 75 80

Asn Gly Gly Ser Leu Asp Pro Asn Thr Arg Val Glu Glu Thr Met Lys 85 90 95

Thr Leu Asn Val Gly Lys Glu Asp Leu Leu Met Trp Ser Ile Arg Gln 100 105 110

Gln Cys Glu Val Gly Glu Glu Leu lle Asp Arg Trp Gly Ser Asp Ser 115 120 125

Asp Asp Cys Phe Arg Asp Asn Glu Gly Arg Gly Gln Trp Val Lys Gly
130 135 140

Lys Glu Leu Val Lys Arg Gln Asn Asn Asn His Phe Ala His His Thr 145 150 155 160

Cys Asn Lys Ser Trp Arg Cys Gly lie Ser Thr Ser Lys Met Tyr Ser 165 170 175

Arg Leu Glu Cys Gln Asp Asp Thr Asp Glu Cys Gln Val Tyr lle Leu 180 185 190

Asp Ala Glu Gly Asn Pro IIe Asn Val Thr Val Asp Thr Val Leu His 195 200 205 Arg Asp Gly Val Ser Met 11e Leu Lys Gln Lys Ser Thr Phe Thr Thr 210 215 220

Arg Gln Ile Lys Ala Ala Cys Leu Leu Ile Lys Asp Asp Lys Asn Asn 225 230 235 240

Pro Glu Ser Val Thr Arg Glu His Cys Leu lle Asp Asn Asp lle Tyr 245 250 255

Asp Leu Ser Lys Asn Thr Trp Asn Cys Lys Phe Asn Arg Cys IIe Lys 260 265 270

Arg Lys Val Glu His Arg Val Lys Lys Arg Pro Pro Thr Trp Arg His 275 280 285

Asn Val Arg Ala Lys Tyr Thr Glu Gly Asp Thr Ala Thr Lys Gly Asp 290 295 300

Leu Met His Ile Gln Glu Glu Leu Met Tyr Glu Asn Asp Leu Leu Lys 305 310 315 320

Met Asn Ile Glu Leu Met His Ala His Ile Asn Lys Leu Asn Asn Met . 325 330 335

Leu His Asp Leu IIe Val Ser Val Ala Lys Val Asp Glu Arg Leu IIe 340 345 350 Gly Asn Leu Met Asn Asn Ser Val Ser Ser Thr Phe Leu Ser Asp Asp 355 360 365

Thr Phe Leu Leu Met Pro Cys Thr Asn Pro Pro Ala His Thr Ser Asn 370 375 380

Cys Tyr Asn Asn Ser IIe Tyr Lys Glu Gly Arg Trp Val Ala Asn Thr 385 390 395 400

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His Asp Ser Trp Lys Asp Ala Ser Gly Trp Ser Phe IIe Ala Gln Gln 435 440 445

Lys Ser Asn Leu IIe Thr Thr Met Glu Asn Thr Lys Phe Gly Gly Val 450 455 460

Gly Thr Ser Leu Ser Asp IIe Thr Ser Met Ala Glu Gly Glu Leu Ala 465 470 475 480

Ala Lys Leu Thr Ser Phe Met Phe Gly His Val 485 490